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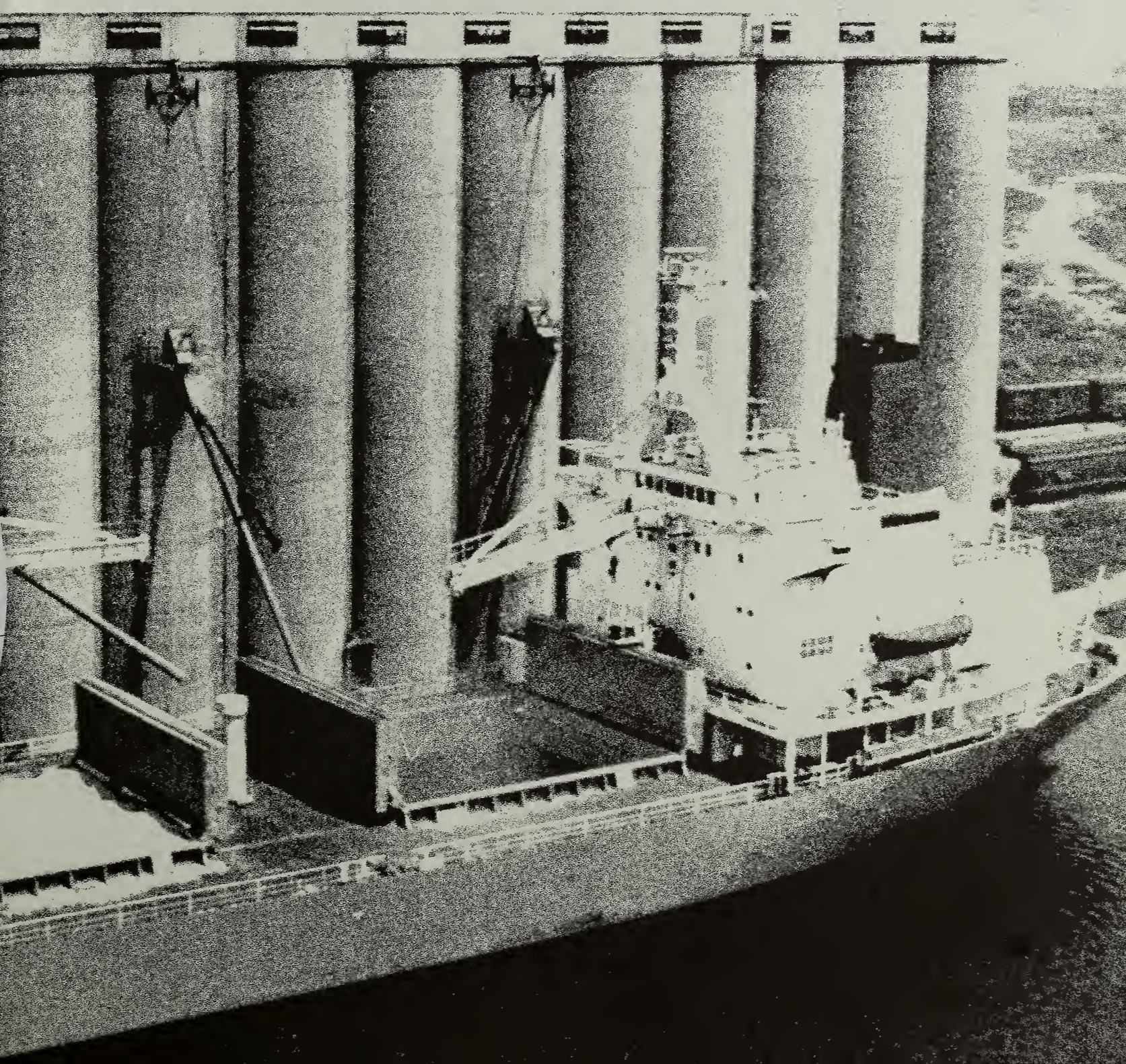
Changes in the International Grain Trade in the 1980's

Robert Bain



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ABSTRACT

The main grain-exporting countries may cooperate more closely in the eighties than in the past. In addition, there may be incentives to vary the policies of the marketing boards in Australia and Canada and increased internal pressure for the United States to sever the link between world grain prices and its domestic prices. Those are some possible consequences if forecasts of higher and less stable grain prices in the eighties are realized and if the structure of world trade continues to move toward more bilateral agreements and a greater role for state trading organizations.

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SUMMARY

Forecasts of tight grain supplies, high and widely fluctuating grain prices, and changes in market behavior in the eighties, if realized, could force adjustments in the exporting policies of the United States and other major grain exporters (Canada, Australia, and Argentina):

° Domestic pressures for the United States to insulate, at least partially, its internal grain price from the world price will increase.

° Grain exporters may be induced to cooperate more than they have in the past in their international and domestic agricultural policies, although the likelihood of their forming a cartel (like OPEC) is slight.

° The Canadian and Australian marketing boards may see attractions in varying their traditional policies on marketing and stockholding.

° Both exporters and importers may seek long-term contracts as the former seek to guarantee market access and the latter to assure sufficient grain supplies to improve national diets.

Those conclusions are based on this report's assumption that the policies of the grain-trading countries will be predicated on political and short-term self-interest rather than on global concerns. The report outlines some likely courses of action by both exporters and importers in response to the current and forecast market conditions.

The forecasts that have been made of tight supplies and high prices contrast with the surpluses and depressed prices of the sixties and early seventies. Current trends suggest that the world may be becoming more dependent on grain imports just when supplies will be more variable, when output may respond more slowly to increases in demand, and when additional supplies could be more costly to obtain.

The shift in the market is due chiefly to a surge in demand for grain over the last two decades, led by the communist countries and the developing countries. The producing countries initially handled the rise in demand by drawing down stocks and by expanding grain production onto land that had been set-aside or idled by government programs, especially in the United States. By 1980, however, stocks were reduced and much of this land was again in production; further expansion is now limited either to less productive land or to land that would have to be diverted from other crops. Although technology and yields will probably continue to improve, an increase in prices relative to costs will be required to sustain an upward trend in output.

Such a tight supply situation will not materialize in every year of the coming decade; grain availability will depend greatly on weather and crop yields and surpluses may well appear from time to time. Clearly, lower stocks on average and a reduced capacity for an expansion in output will magnify the impact of widespread droughts on the market, resulting in greater instability in prices.

Most of the response to the more widely fluctuating prices will be borne by a constantly shrinking free market, which includes the domestic U.S. market. The free market is likely to continue to shrink because of increasing domination of the market by state trading organizations and bilateral contracts, the chief concern of both being to obtain specific quantities of grain with relatively little regard to price. This segment of the market, therefore, is fairly inflexible in its response to price.

The United States, Canada, and Australia will find it increasingly difficult to achieve their policy objectives without some changes in both their domestic and international marketing arrangements.

Changes in the International Grain Trade in the 1980's

Robert Bain*

INTRODUCTION

Major alterations seem to be taking place in the pattern of international trade in food and feed grains (wheat, corn, barley, and oats). The existing framework of institutional and marketing relationships largely developed against a background of surplus supplies and a search for multilateral solutions to trade problems. There is considerable speculation, supported by some evidence, that changes are taking place in those underlying determinants of market behavior:

- Since the early seventies, world markets appear to have been moving into a period of more frequent tight supply situations than in the past three decades (48, p. 15, 66, p. 16). 1/
- Price instability will likely worsen in the eighties (47, p. 15, 24, p. 172).
- The impact of trade on the U.S. domestic economy and rural sector is receiving greater scrutiny from academicians and policymakers in industry and government (24, p. 168, 23, p. 806, 36, p. 147, 2, p. 28). In addition, it is becoming a major political issue.
- The structure of world trade is becoming increasingly dominated by state trading organizations with the market less able to adjust through normal supply, demand, and price mechanisms (58, 26, p. 2).
- There is a widespread movement away from multilateral solutions toward greater politicization and bilateralism in current approaches to trade problems (24, p. 179, 57, p. 2, 46).

In at least two major countries trading in agricultural products, the United States and Australia, farm policy reviews are being conducted partly on the basis of these

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*Robert Bain is an Assistant Director with the Australian Bureau of Agricultural Economics currently on exchange with the Economic Research Service.

1/ Underscored numbers in parentheses refer to items cited in the References section at the end of this report.

forecasts (67, 71, 44). By considering the response of the international grain market to these developments, this paper discusses the probable impact of these trends on the traditional structure and conduct of the market.

Some commentators foresee that the main grain producing and consuming countries will respond to the problems of the eighties with more internationally concerned conduct (59, p. 13; 67, p. 151). While some benefits may be achieved by exhorting policy-makers along this path, it is more likely that most behavior will reflect self-interest instead of a global viewpoint. Thus, the underlying theme of this paper is that governments, trading firms, marketing institutions, and producer groups will attempt to choose policies and strategies aimed at maximizing their own interests, usually perceived in a fairly narrow, political, and short-term context.

Increased cooperation between the grain-trading countries is not precluded by accepting this fairly inward looking rationale for grain policies. In fact, the links between most participants in the market may well be tightened over the next decade. If so, however, this will occur because of the interaction between market forces and domestic policy objectives rather than as a result of a desire to guarantee and stabilize world food supplies and prices.

In the following sections, some conventional wisdom concerning market prospects for grains in the eighties is reviewed briefly, the links between trends in the commodity markets and changes in trade structure and conduct are outlined, and some major economic consequences of these changes are discussed. Finally, the effects of the new market situation on the operating environment of the grain trade are considered.

MARKET PROSPECTS

Total world trade in grains expanded strongly over the last decade. In addition, trade as a proportion of both world consumption and of production in the major exporting countries rose greatly. These trends were in response to the increase in demand in the major centrally planned economies and in some developing countries--a demand that outstripped their domestic supply. This section focuses on the critical elements in the forecasts that have been made for the eighties, particularly commodity market and policy trends in the major trading countries. 2/ In so doing, heavy reliance is placed on recent research into the situation and outlook in specific countries.

Major Trends in World Production

After reviewing the trends in world production and trade in wheat and coarse grains, McCalla (39, p. 57) concluded "that major structural changes have occurred: (1) exports are increasingly concentrated in a few exporters with the importance of the U.S. increasing; (2) the LDC's (less developed countries) emerged as the dominant importers of wheat while the developed countries have declined in importance; (3) the centrally planned economies have entered the wheat and feed grains market as major importers; (4) the USSR has basically switched from an exporter to a net importer but her forays into the market are erratic with significant destabilizing results; (5) the (EC-9) (European Community) has become a net exporter of wheat and a steady importer of coarse grains; (6) the most rapid and sustained increases in demand for wheat and feed grains are coming from OPEC countries and middle income LDC's with adequate foreign exchange; (7) overall volume of trade is increasing with the rate of increase in coarse grains more rapid than wheat, and (8) the proportion of world wheat production traded has remained constant at about 21 percent of production while the proportion of coarse grain production traded has doubled to about 13-16 percent."

A major consequence of these developments is that the tendency for chronic oversupply among the main exporting nations has steadily eroded. In contrast to the situation of a decade ago, the United States, for example, has no land deliberately set aside or diverted from grain production; U.S. grain stocks, nevertheless, are well below the levels of the sixties and early seventies (table 1). 3/

Current Market Shares

The current import and export market shares reflect the trends of the seventies and some of the recent more or less random changes (mainly weather induced) in the market (table 2). For

2/ The reader looking for all-embracing studies of the world grain situation is referred to 58, 64, 66, and 69.

3/ Metric units are used in the table and throughout the report. A hectare (the metric unit of area) equals 2.471 acres. A metric ton equals 2,204.62 pounds.

Table 1--U.S. grains supply and utilization

Year	Coarse Grains						Wheat					
	Area harvested	Production	Exports	Feed use	Ending stocks	Area set-aside or diverted	Area harvested	Production	Exports	Feed use	Ending stocks	Area set-aside
	Million hectares	Million metric tons				Million hectares	Million hectares	Million metric tons				Million hectares
1960	52	142	11	109	77	0	21	37	18	1	38	0
1965	39	144	26	116	40	14.1	20	36	23	4	18	2.9
1970	41	146	19	117	32	15.1	18	37	20	5	22	6.4
1971	44	190	24	136	47	7.4	19	44	16	7	27	5.5
1972	38	182	39	142	32	14.8	19	42	30	5	16	8.1
1973	42	187	41	139	22	3.8	22	47	33	3	9	3.0
1974	41	151	36	105	15	0	26	48	28	1	12	0
1975	43	185	50	116	17	0	28	58	32	1	18	0
1976	43	194	51	113	30	0	29	58	26	2	30	0
1977	44	206	56	119	41	0	27	56	31	5	32	0
1978	43	222	60	137	46	3.4	23	48	33	4	25	3.9
1979	42	239	71	140	53	1.9	25	58	37	2	25	3.3
1980[1/]	41	199	74	131	21	0	29	65	42	3	25	

1/ Preliminary.

Source: (68, 70, 74).

Table 2--Wheat and coarse grain production and trade, 1978-80 average

Major exporters 1/	Wheat		Coarse grains		Total	
	Production	Exports	Production	Exports	Production	Exports
	1,000 metric tons					
United States	56,972	37,142	219,859	68,635	276,831	105,777
Canada	19,154	14,954	20,177	4,247	39,331	19,201
Oceania	15,397	11,997	6,780	3,208	22,177	15,205
EEC	48,478	16,937	67,816	13,118	116,294	30,055
Argentina	8,000	4,218	16,093	9,085	24,093	13,305
World Total	436,650	91,884	735,770	107,741	1,172,420	199,625
Major importers	**Production**	**Imports**	**Production**	**Imports**	**Production**	**Imports**
	1,000 metric tons					
Developed countries	153,148	18,535	351,599	51,849	504,747	70,384
EEC	48,478	10,665	67,816	21,706	116,294	32,371
Japan	497	5,664	391	18,636	888	24,300
Centrally planned countries	193,676	27,218	230,928	28,077	424,604	55,295
Soviet Union	103,040	11,422	89,061	15,274	192,101	26,696
China	57,833	10,304	80,200	2,044	138,035	12,348
Eastern Europe	32,802	5,492	61,667	10,760	94,469	16,252
Developing countries	89,976	41,716	154,825	24,595	244,801	66,311
Middle America	2,475	2,156	16,404	5,682	18,879	7,838
Brazil	2,732	4,377	19,739	1,583	22,476	5,960
Venezuela	1	840	1,299	1,106	1,300	1,946
Other South America	1,509	2,943	4,243	1,029	5,752	3,972
High-income North Africa and Middle East	7,817	6,926	1,871	3,809	9,688	10,735
Low-income North Africa and Middle East	19,765	9,397	18,492	1,819	38,257	11,216
East Africa	392	471	9,812	578	10,204	1,049
Central Africa	427	2,799	19,595	601	20,022	3,400
India	32,940	33	28,823	10	61,763	43
Other South Asia	13,070	3,365	3,683	34	16,753	3,399
Indonesia	0	1,288	3,645	49	3,645	1,337
Other Southeast Asia	75	1,047	483	150	558	1,197
High-income East Asia	57	3,099	1,497	7,003	1,554	10,102
Low-income East Asia	0	1,196	3,177	690	3,177	1,886

1/ For country groupings see (68, pp. 9-10).

Source: (74).

wheat, in recent years the United States has accounted for about 41 percent of exports followed by the European Economic Community (EEC) with 18 percent, 4/ Canada (18 percent), Australia (13 percent), and Argentina (5 percent). The feed grain trade is even more strongly dominated by the United States (64 percent), followed by the EEC (12 percent), 4/ Canada (4 percent), Australia (3 percent), and Argentina (8 percent). On the importing side, the major centrally planned economies took nearly a third of both wheat and coarse grain imports. The developing countries imported 35-40 percent of world wheat trade but only 7 percent of coarse grains. In contrast, the developed countries took only 20 percent of the wheat trade but nearly half of all coarse grain imports.

The EEC purchased a large proportion of the developed countries' grain imports. The EEC is a net exporter of wheat, net importer of coarse grains, and, with 1980 marking the first time, a net exporter of total grains.

The world grain situation in the eighties is expected to be strongly influenced by the following developments.

Developed Economies

Developed countries purchase about 37 percent of all grain imports (table 2). Relatively slow growth in overall demand in these countries is expected due to reduced population growth and a bearish economic outlook. The rate of population expansion is expected to decline from 0.84 percent in the seventies to 0.71 percent in the early eighties. Per capita income is expected to increase at about 2.1 percent over the coming decade compared with 2.4 percent in the seventies (48, pp. 7, 8).

The trend in demand for grain in the developed countries will also depend heavily on changes in the consumption of grain-fed livestock products. Consumption of livestock products is not expected to increase substantially in North America and Western Europe, the principal consuming regions (16, p. 10; 19, pp. 8-15, 45, p. xxv). The main prospect for increased feed grain use appears to be in Japan, where meat consumption is expected to increase significantly over the next decade (56, 36). While Japanese consumption is small in terms of global usage, Japan accounts for about 17 percent of world trade in feed grains and 6 percent of the wheat trade, and therefore, can have a significant effect on world markets. However, feed grain consumption is fairly price responsive since livestock producers frequently vary both the content of the feed mix and the overall level of feed-

4/ Gross exports of the EEC-9.

ing (number of livestock fed, length of time in feedlot, etc). Therefore, any growth in this market is unlikely to have a major inflationary effect on world grain prices. 5/

The other possible growth area for grain demand is in the production of liquid fuels. Overall, however, there does not seem to be a strong prospect of major increases in grain used for liquid fuels in the developed countries. Grain usage for ethanol has been projected to expand in the United States from about 1.5 million metric tons in 1980/81 to 14-22 million metric tons in 1985/86 (48 p. 18). But an ethanol program on this scale, likely to require very substantial subsidies (31), is doubtful under the current fiscal outlook.

The Developing Countries

The developing countries account for about 34 percent of world grain imports (table 2). Grain import needs for both food and livestock feed will increase in all developing countries over the next decade. However, at least a third of grain imports by this group go to low-income countries that are dependent on food aid and have severe foreign exchange constraints and large external debts. Higher world prices and restricted foreign aid budgets will limit the growth and may even reduce the imports of these low-income countries (11).

Another third of this grain goes to the relatively rapidly growing economies of North Africa, the Middle East, East Asia, Mexico, and Brazil. A number of studies suggest a continuing strong increase in food demand in Mexico and the wealthier Middle East and North African countries. Grain consumption in some Asian countries (principally South Korea, Taiwan, Hong Kong, and Singapore) and in Brazil will depend largely on the expansion of livestock feeding and may be fairly sensitive to any increase in prices.

Major Centrally Planned Countries

Over the period 1978-80, the centrally planned countries consumed about 29 percent of world grain imports (table 2). Their commitments to improved diets and higher and more stable meat supplies are likely to continue to require substantial imports of feed grains (67 p. 25). Soviet grain imports are expected to remain close to recent high levels over the next 2 or 3 years while stocks are rebuilt. However, given normal seasons and some realization of a planned increase in output of pulses and other substitute livestock feeds, import demand for grains may slacken by the mideighties. Nevertheless, as imports provide only about 10-20 percent of grain consumption in the USSR, the volume of grain required to provide this residual supply will vary widely with even relatively small changes in domestic grain yields.

5/ In more technical terms the demand curve for feed grain is fairly elastic and therefore a shift in demand will have a relatively small impact on prices.

The Chinese Government's commitment to raise standards of living has increased its demand for grain (62, p. 16). Imports rose sharply from around 7 million metric tons per year through most of the seventies to about 15.5 million metric tons in 1980. Long-term agreements now in effect with major suppliers suggest planned imports for the next several years of a minimum of 12 million metric tons and possibly as much as 17 million metric tons, most of which will be wheat.

Imports of grains by the East European countries rose from around 10 million metric tons in the early seventies to 18 million metric tons in 1980. Despite only fair prospects for economic growth, demand pressures will increase in the eighties because of efforts to upgrade national diets. Some expansion in domestic production, however, and lack of foreign exchange may constrain imports.

Overview of the Projections

Proponents of the tight supply scenario for the eighties argue that, in general, supply in the importing countries will not keep pace with demand and the decline in overall self-sufficiency, evidenced in the seventies, will continue. Part of the rise in imports, however, may have been abetted by a decline in the relative price of grain, partly because of a fall in the value of the U.S. dollar. If prices strengthen in the eighties, production will rise and consumption will fall in many importing countries. Since the developed countries and the centrally planned economies obtain less than 15 percent of their grain from world markets, a relatively small production and consumption response to rising prices could have a major effect on world trade.

In countries accounting for the bulk of world imports, however, grain prices are set at artificial levels that need not reflect the international market, particularly in the short to medium term. Internal price controls provide a tool of economic management and prices are not determined by supply and demand. Prices may be held at low levels to reduce inflation or to protect the consumer (as in some developing countries), or alternatively set above the world market to support farmers' incomes (EEC) or to encourage production (Japan). Nevertheless, higher world prices would, in the long run, provide an incentive for governments in the importing countries to place more emphasis on expanding output and obtaining alternative livestock feeds.

The grain producers in the main exporting countries, except the EEC, would feel the effects of higher world prices and, other things being equal, would have a clear incentive to boost output. Tending to dampen any increase, however, are several factors, the chief of which are:

- o The potential for greater production by the exporters as a group has declined significantly as the supply of set-aside land in the United States has diminished (47, p. 20).

- o In order to expand production, the industry will be forced into areas less physically or climatically suited to cropping.

Nevertheless, recent forecasts of wheat production in the United States, Australia, Canada, and Argentina indicate that substantial expansion may take place. In addition, a rise in real prices would reduce livestock feeding, particularly in North America, making more grain available for export. Generally, consumption would fall in the United States and Argentina but the domestic pricing schemes in Canada and Australia would partly shield consumers from higher world prices.

Overall, current trends suggest that the world is likely to become somewhat more dependent on grain imports at a time when supplies may be more variable, when output will tend to respond more slowly to increases in demand, and when additional supplies will be more costly to obtain. Grain prices have traditionally risen more slowly than the overall price level in most countries, but this pattern may be less marked and may even be reversed over the coming decade.

A number of factors may also destabilize prices in world markets. If temporary surpluses arise in a period of generally high prices, exporting countries will not subsidize the diversion of cropping land or finance grain reserves in order to support farm incomes, as they did during periods of sustained oversupply. Many major grain purchasers, however, particularly the more affluent developing countries and the centrally planned countries, will remain insensitive to price changes and will require largely predetermined quantities of imports.

In addition, most domestic markets will continue to be insulated from world prices, and therefore, a large proportion of any adjustment to changing demand and supply conditions will have to be made by the residual world market and the U.S. domestic market (33, p. 156). 6/

With production taking place in more risk-prone areas, fluctuations in output may be larger and more frequent. 7/

6/ The market-insulating policies are set out in detail in Jabara (30).

7/ There is, however, some evidence that Australia's wheat-growing area is expanding in areas where yields, although low, are relatively stable (7).

As discussed later in this paper, the international market structure and trade relationships may change in a manner that will tend to destabilize world prices. A marked increase in the level and instability of world prices could induce the United States to adopt more inward-looking policies aimed at stabilizing the domestic market. These policies could have spillover, destabilizing effects on world trade. 8/

A number of developments could offset those tendencies toward greater instability. Cooperation between grain-trading countries could improve, resulting in better coordination of shipments and stocks. Importing countries could adopt stockholding and other supply adjustment policies to offset the decline in use of such policies by the exporters. Economic development programs and food import plans in the LDC's and centrally planned countries could be revised with greater emphasis on self-sufficiency. A run of exceptionally good seasons could create surpluses lasting well into the decade, and major technological breakthroughs could lead to substantial increases in yields.

It is possible to draw a variety of overall conclusions concerning the prospects for the world grain market in the eighties as there is plenty of room for disagreement over the relative rates of change in supply, demand, and prices of grains. Assigning *a priori* probabilities to the various possible outcomes is very difficult. Periods of tight supplies in the past have invariably been accompanied by forecasts of doom and chaos in the world food situation, forecasts that, except in the world's poorest nations have failed to materialize. Probably, the most one ought to say, therefore, is that a chronically unstable and tight supply situation is more clearly within the feasible set of forecasts than has been the case over most of the last three decades.

The consequences of such tight supplies and price instability for many aspects of American agriculture, including some export-related issues, have already been examined (67). In the rest of this paper, more of the implications for the international market are considered.

8/ Paarlberg and Holland, for example, have shown that a "U.S. producer wheat board would stabilize the internal U.S. price to consumers and would increase the variability in the world wheat price" (52, p. 22).

CHANGES IN MARKET STRUCTURE AND CONDUCT

The mix of political and institutional factors affecting the world grain market was modified in the seventies. This led to changes in structure and conduct, such as increased state trading and bilateralism, that will affect the patterns of output, usage, trade flows, and price variability in the grain market over the next decade. The most marked impact will be a reduced overall ability of the world's grain industries to respond to higher demand and higher prices, particularly if the forecasts of reduced buffer stocks and smaller cropland reserves in the United States are realized.

Trends in the Institutional Framework

The Importing Countries. The main institutional change in the market in recent years was the rise in grain imports by the centrally planned countries (58, p. 57, 26, p. 3). Imports by these countries are largely carried out by government agencies, whose constraints are mainly a function of the domestic political and economic situation. The level of their purchases is often relatively insensitive to world prices and may not readily adjust to changes in the overall international supply and demand situation. Internal crop shortfalls, the availability of foreign exchange, the level of domestic food and feed supplies called for in government plans, and other similar factors all play a major role in determining the extent of their imports.

As discussed earlier, an increase in world prices does not dampen consumption, stimulate production, and induce the release of stocks in the centrally planned countries as it would in a free market situation. The absence of response in grain usage and output in the centrally planned countries to changing market circumstances tends to exacerbate fluctuations in grain prices in the world market, thereby causing the more open economies to experience relatively greater changes in consumption, production, and stock levels.

Grain purchases by the developing countries are also frequently made through governmental or quasi-governmental organizations and domestic prices often do not reflect those on world markets. Imports by these countries are influenced by the interaction of prices, foreign exchange availability, and eligibility for foreign aid programs. As a group, these countries tend to be less responsive to changes in world prices than most of the developed countries.

The main developed, noncommunist grain importers are Western Europe and Japan. Their share of the world market declined over the last decade from an average of 44 percent from 1968 to 1970 to 28 percent in the 1978-80 period. Grain prices in the EEC and wheat prices in Japan are traditionally maintained well above world trade levels in order to encourage domestic production and to support farmers' incomes. The difference between world prices and internal prices is absorbed by variable levies in the EEC and

in the implicit import charges levied by Japan's food-importing agency. Thus, output in Europe and wheat production in Japan are not greatly affected by the level of world prices. However, feed grain imports are not controlled by the Japanese Government and livestock producers vary consumption according to the market situation (56).

Generally, grain purchases by the developed countries have not shown the variability and unpredictability exhibited by many of the centrally planned and developing countries, whose increasing domination of the world market will probably cause trade to become more unstable. 9/

The Exporting Countries. The institutional changes involving the exporting countries in recent years have been less marked than those affecting importers. Nevertheless, some of the operations of export marketing boards and developments in bilateral contracting have significant implications for grain trade in the eighties.

Grain exporting is largely in the hands of marketing boards in Australia and Canada and private traders in the United States and Argentina. 10/ In some respects this distinction is more apparent than real. In the medium to longer term, wheat prices in Australia and Canada follow the world market, although in the short run they do not fluctuate as frequently as in the United States (40, p. 207, 6, p. 20). Also, the U.S. and Argentine Governments have, from time to time, stepped in and influenced world trade through a variety of domestic and international measures, like trade embargoes, export taxes, and subsidies.

But there are major differences between marketing boards and private or cooperative marketing firms in terms of the basic constraints they operate under and, consequently, in their behavior patterns. For example, boards are able to insulate domestic consumers and producers from short- and medium-term fluctuations in the world market. In Australia, producers receive an averaged pooled price (by grade) for all the wheat sold by the Board in a given season. Only freight and storage deductions vary by region. The main payment to farmers is made when the wheat is delivered to the elevator, and the balance is paid after the

9/ This has been partly because of more stable levels of domestic production in the developed importing countries. The import regulations of the developed countries, such as the EEC variable levy system, do have a major destabilizing effect on world prices in many instances.

10/ For Australia, coarse grain exporting is not controlled by a single board, but wheat exports, which account for 70 to 80 percent of total grain shipments, are completely controlled by the Australian Wheat Board.

wheat is sold and costs deducted. Thus, price signals from the market to producers are considerably dampened and there is no incentive for producers to hold stocks in order to capitalize on marketing opportunities through the year. 11/

In addition, some policy mechanisms have been adopted to smooth year-to-year fluctuations in the payment on delivery, the main market signal received by producers. Thus planting decisions may not, in the short to medium term, be closely attuned to market prices. 12/

Both the Australian and Canadian boards can impose marketing restrictions that, in effect, reduce wheat plantings, although in the past, the Australian Wheat Board has been reluctant to do so, except in times of extreme surplus. 13/

The boards also have some powers to regulate domestic prices. Generally, because internal market prices fluctuate less than world prices, the adjustment of domestic consumers to changes in the international market is dampened. Also, the pooling of returns from domestic and exports sales tends to stabilize prices received by farmers, and thus affect decisions as to whether to expand or contract output. The relatively small size of the domestic markets, however, has meant that in practice the extent that prices have been influenced by this mechanism is also small.

Most important, the boards affect world prices and trade through their marketing decisions. They were established primarily to reduce competition among their own producers for domestic and overseas markets and coordinate marketing and stockholding decisions--to be monopoly sellers on behalf of grain growers. They regulate the flow of grain to the market in an attempt to attain a range of objectives relating to these basic concepts: price stability, preservation of market shares, revenue maximization, avoidance of high stock levels, avoidance of a need to institute production or marketing controls and discrimination among markets.

Over much of their existence, these boards have been able to operate under the assumption that the U.S. crop program, including land diversions, loan rates, and stockpiling, will provide a

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11/ For a more detailed discussion of the operation of the Australian and Canadian Wheat Boards see (6, 43, 17).

12/ Nevertheless, the current Australian wheat stabilization scheme ensures that producer support will be inevitably modified with longer run adjustments in market returns whether those adjustments relate to a rising or falling market.

13/ The aversion to production controls in Australia is still strong in the Australian Wheat Board and among producer organizations (see, for example, (41)).

basic level of stability to world markets. Because of their small market share, they have faced a relatively elastic demand curve over the medium term. With little control over prices in the medium to long term, they have concentrated on establishing new markets, sometimes by entering into bilateral agreements, and maintaining their market shares through short-term marketing strategies. However, if import demand becomes more inelastic in the future and if the United States will no longer be such a stabilizing force in the market, the marketing strategies of the boards could have a much greater influence on world prices than in the past. The prospects for developments in these directions are considered later in this paper.

Bilateral Agreements. Market developments of recent years have prompted the United States, Canada, Australia, Argentina, and some of the major importing countries to look closely at the strengths and weaknesses of bilateral agreements or, at least, assurances of supply and access. Most of the major features of the U.S.-USSR and U.S.-China agreements are well known (62, 68 p. 18). 14/ Clearly, the U.S. Government considers, that, in dealing with these two large and relatively unpredictable customers, the gains from being able to control and stabilize to some degree the quantities directly purchased, as well as the benefits of additional market information obtained through the agreements, will offset the possible problems of allocating supplies between the various domestic and overseas markets (57, p. 4).

In turn, several importing countries, who perceive both increasing numbers of bilateral arrangements and the prospect of a tighter supply-demand situation, have also sought various formal and informal assurances of supply. Importers who require at least a minimum volume of imports each year as part of their basic food or animal feed program see obvious attractions in bilateral agreements. Such agreements may protect importers from export restraint programs imposed by exporters and, most important, they represent a commitment by an exporter to direct supplies to their contractual partners--at the expense of other markets, if necessary.

There is also some potential for a snowball effect among importers. As increasing numbers of importers make bilateral arrangements with the major exporters, potential supplies to the free market are diminished and the other importers also feel pressured to protect their supplies. The more price responsive importers, however, will be fairly reluctant to sign up. As discussed earlier, some of the major feed grain importers are

14/ These agreements, like most bilaterals, contain considerable detail about quantities that can or will be traded but tend to allow price to be determined by the world market at time of shipment.

able to vary the components of their feed mix according to the market, buying large quantities of feed grains in periods of low prices but substituting other products and reducing feed intake to some extent when grain is expensive. These countries will find fixed-quantity bilateral agreements relatively less attractive. Also, some centrally planned countries will be uneasy about the amount of internal information they are forced to expose in negotiating and implementing bilateral contracts.

Such long-term contracts offer advantages and disadvantages for exporters. Among the disadvantages, exporters may find their hands tied in marketing, opportunities for market discrimination may be reduced, chances to use food as a lever of diplomacy may be curtailed, and some difficult allocation decisions between domestic users and overseas customers may be required from time to time. Unless backed up by a careful reserves policy, the risk of overcommitment is always present. The political and economic costs of negotiation and enforcement may be high. Looking at the issue more broadly, exporters may be concerned about additional price instability on international markets that may be caused by entering into bilateral contracts.

Among the advantages for exporters, sales are guaranteed (particularly with respect to the centrally planned economies), grain shipments can be planned, market information may improve and demand expand as importers become accustomed to regular shipments for, say, a new livestock-feeding industry. As part of an agreement, importers may be persuaded to regulate their purchases and accept a greater stockholding role in the market. 15/ Bilateral agreements may likewise serve a range of foreign policy goals such as providing guaranteed economic support for a political ally.

There are prospects for a snowball effect on the exporter side as well. Market shares play a major role in the competitive interplay between exporters, so if one exporter locks in a share of a major market, others may come under strong pressure to attempt the same. 16/

15/ The Congressional Budget Office argues that "a series of bilateral agreements which would increase reserves in the United States and in importing countries could lead to greater stability in U.S. agriculture" (14, p. 21).

16/ The response of other exporters to the U.S.-PRC bilateral agreement signed in 1980 is one example. China is a traditional major outlet for Australian wheat. Australian producers, the Australian Wheat Board, and the Australian Government reacted adversely to news of the U.S. agreement and attempts were made to safeguard Australia's position in that market. Also, at the Australian National Agricultural Outlook Conference, the Minister for Primary Industry and the Director of the Bureau of

The upswing in the proportion of the wheat trade covered by bilateral agreements, following the tightening of grain supplies in the early seventies, tends to support this argument. The percentage of trade covered by bilateral agreements rose from about 10 percent in 1973/74 to about 25 percent in 1975/76. Most of the increase, however, resulted from a few large and several small agreements signed by the United States. The other exporters already had a number of agreements and did not rush into new commitments. As grain supplies built up in the late seventies the proportion of trade covered by bilaterals diminished.

It may be that the dislocations of the seventies were regarded as relatively short term while the more sustained tight market scenario for the eighties is receiving wider acceptance. Also, during the midseventies the Tokyo Round of the General Agreement on Tariffs and Trade, Multilateral Trade Negotiations (MTN) and discussions for a new International Wheat Agreement were proceeding on a fairly optimistic note. Neither proved very successful. The MTN failed to achieve substantial improvements in either the specific regulations or general rules covering trade in agricultural commodities. The Third Session of the United Nations Wheat Conference in 1979 did not reach agreement in several key areas and adjourned indefinitely. Parties to the conference agreed that the central mechanism of a new International Wheat Agreement should be an internationally coordinated system of nationally held reserve stocks to be accumulated when prices are low and released when prices are high. However, the conference could not agree on trigger price levels, the size of aggregate stocks and of individual country shares, or the concessions and assistance to apply to developing countries (4, p. 3).

The recent frustration with multilateral arrangements has strengthened the arguments favoring bilateral agreements (24, p. 167, 13). Overall, there seems a strong possibility of a trend toward increased numbers of bilateral arrangements, particularly if world grain markets remain finely balanced, that is, without the stabilizing influence of substantial stocks in the United States or elsewhere.

Economic Consequences of Structural Change

Hathaway and others have pointed to the potentially destabilizing effects of an increasing proportion of world trade being controlled by governmental or quasi-governmental institutions that are unresponsive to market pressures (26). Their purchases do not reflect the international market situation because the prices in their domestic markets, which guide the decisions of their producers and consumers, do not reflect the world situation.

Agricultural Economics both indicated that the negotiation of bilateral agreements will receive major attention in Australian trade policy (46).

Thus, the arena for adjustment becomes the residual free world market, and the domestic markets of some of the major exporters (principally the United States).

Harris (24), McCalla (39), and Saylor (56) have discussed in general terms the greater price instability that may result from bilateral agreements covering large quantities of grain. They emphasize the likelihood that this will require a diminishing residual market to absorb most of the pressure for adjustment resulting from shifts in supply and demand.

Webb (79) and Nuttall (47) have looked at this issue using more detailed, analytical models and some restricting assumptions. Both found that as the proportion of trade covered by bilateral agreements increases, the slope of the excess demand and supply schedules change. Generally, the curves become less elastic, particularly at relatively high prices and low volumes. Thus, the variability in prices resulting from shift in either grain supply or demand will be magnified as the proportion of trade covered by agreements increases.

These studies are generally based on the assumptions that bilateral agreements are essentially quantity related and that the prices at which the contracted grain changes hands are the current ruling free market prices. It may be possible to introduce a price-smoothing formula into the agreements, particularly in those between export marketing boards and government importing agencies. The adoption of some price-averaging arrangements could reduce the market volatility engendered by bilateral agreements. 17/

The economic consequences of increased bilateralism, particularly in the context of a continuing tight world demand and supply balance, may, nevertheless, be severe. Declining import demand elasticities and the accompanying increase in price instability will affect a number of key macroeconomic variables (such as food prices and the CPI) in the open market economies, domestic grain consumption and the operation of price stabilization

17/ It is risky to draw comparisons between the markets for different commodities. Nevertheless, the fact that some 30 percent of world sugar is now traded under bilateral agreements has been held partly responsible for the extreme volatility of free world sugar prices. The search for pricing formula to include in the bilateral contracts and the efforts by many nations to develop an effective international price stabilization/buffer stock arrangement for sugar probably have some implications for the grain market in the eighties. For a discussion of the rationale and principles for including pricing provisions in bilateral agreements, see Raphael (43).

schemes. They will also increase the impact on world prices of the individual actions of each major trading country.

Finally, price uncertainty is likely to rise in association with increasing rigidity in the structure and conduct of the grain market. Prices will react more markedly to, say, a changing crop forecast, a large sale, an embargo, a dock strike, or a change in government policy. The policy consequences of these developments are discussed in more detail in the following section.

PRESSURES ON EXPORTERS' TRADE POLICIES

Clearly the possible developments in the supply-demand situation, together with the current trends in the structure of the market have a number of implications for grain policies in the eighties. The aim of this section is primarily to discuss the pressures that these developments could place on the trade policies of the major exporters and to suggest the direction of some possible policy changes.

Adjustments in the Market

Increased institutional control and more bilateral linkages will tend to further divide the trade into a large inflexible segment and a small residual free market. The bulk of the adjustment to changing market conditions will, in the short term, have to be absorbed by this residual, together with the U.S. domestic market. In the medium term, the other major exporters, Australia, Canada, and Argentina, can expect market shocks, particularly if the United States is without large buffer stocks of grain or reserve cropland, since their domestic policies do not completely insulate them from the international market.

In the short run, the price elasticity of demand for grains for most of the major importers is fairly low. Only the demand for feed grains (in a few of the developed and rapidly developing countries, such as Japan and Taiwan) and demand for food (in the poorest underdeveloped countries) show much short-term response to price.

On the domestic side, demand for livestock feed in the United States is the major price elastic market in the short term. This market absorbed much of the adjustment pressure during the tight grain supplies in 1974, with consequent adverse effects on livestock production (25, p. 100). The price of corn rose from around $1.60 per bushel (No. 2 Chicago) in early 1973 to well over $3.75 per bushel in late 1974. Total feed grain consumption fell by 25 percent from 1973/74 to 1974/75, while exports declined by only 11 percent.

Surges in prices for grain for food use, for livestock products, and for ethanol production will affect the Consumer Price Index (CPI). Fluctuations in grain prices tend to have an asymmetrical effect on inflation: a surge in prices will push up the CPI and other indices and will be passed on, in automatic adjustments, to wages and prices in a manner not fully reversed when grain prices fall. Sharp increases in feed prices affect the livestock industry by causing greater numbers of breeding animals and non-fed cattle to be slaughtered. But when grain prices fall, biological constraints on livestock numbers prevent a rapid recovery in numbers in response to a fall in grain prices.

Conversely, a slump in grain prices can adversely affect the cash flow of grain producers. Penn argues that increased reliance on purchased inputs and borrowed capital has made the large U.S. farms, which produce most of the country's grain, much more vulnerable to price instability in recent years (67, p. 84).

If price movements are sustained for a longer period, they will have an impact on most of the other major exporters and many importers. The operations of the marketing boards in Australia and Canada, the Australian wheat stabilization scheme, and the Japanese feed grain stabilization arrangements all provide a partial buffer in those countries against short-term price fluctuations. 18/ In the longer run, however, price changes have to be passed on or stocks accumulated; and in some cases, national treasuries will face substantial payments to producers to offset price changes. In addition, the limited foreign exchange availability of some of the less developed importing countries may force them to curtail their import purchases if prices remain high for extended periods.

General Policy Adjustments

Policies adopted over the last two decades provide some guide as to how exporters may respond to market pressures, at least initially. There has been considerable academic debate concerning the economic features of the basic policies of the wheat-trading countries. For example, McCalla (37, p. 711), Taplin (6), Alaouze, Sturgess, and Watson (3) have argued that cooperation among the major wheat exporters in an oligopoly or triopoly framework based on maximizing revenue while maintaining more or less stable relative market shares, provides the rationale for many of the developments in prices and stock levels. Carter and Schmitz consider that the import tariffs by the EEC and Japan have been major factors in determining prices (8). Grennes and Johnson focused more on the importance of domestic issues as major determinants of trade policy and allied their discussion to the economic theory of regulation (21, 22).

When the motivation and mechanisms for grain trading are examined on a country-by-country basis, it becomes very difficult to develop a general theory of grain trading. With hindsight it is possible to discern periods when each of the above *modus operandi* played a major role in the world wheat trade, but it is less easy to make *a priori* judgments about how they might be extended to grain in general and to the market situation over the next decade. 19/

18/ For a more detailed discussion of stockholding measures in the major trading countries see (78).

19/ McCalla concludes "in sum, models of international markets leave much to be desired in terms of capturing actual price and/or flow behavior in world markets" (38).

The most important policy objectives in the main trading countries can be summarized as follows:

- Developed country importers--protecting domestic pricing structure while obtaining sufficient grain to augment domestic food and feed supplies.

- Centrally planned importers--obtaining sufficient quantities to cover planned imports plus any additional domestic shortfall.

- Developing country importers--obtaining supplies to bolster food availability and hold down consumer prices but often within a foreign exchange or expenditure constraint.

- Exporting countries--a mix of objectives related to the goals of producers, producer organizations, trading firms, and marketing institutions. Neither consumer interests nor general economic policy goals have had a major impact on grain export policies in the past, except in a few isolated instances. This may, however, be changing.

As a higher proportion of imports tends to move toward the centrally planned economies and the faster growing developing countries, concern with assuring adequate supplies is likely to grow among these buyers. Further, if supply and demand are tightening, resulting in more of a sellers' market, the policy objectives of the exporting countries will increasingly come to the fore. It could be argued that the large stockholding and land diversion programs of the sixties and part of the seventies (adopted primarily by the United States) reflected the exporters' being forced to respond domestically to what had become a buyers' market internationally. One might infer that, if the outlook scenario presented earlier materializes, the tables may turn.

If, as argued earlier, exporters perceive a general failure of multilateral agreements and still have preservation of market share as a prime objective, they are likely to respond positively to at least some proposals from importers for long-term bilateral supply agreements. Each exporter, seeing competitors lock in part of their market shares, will also have an incentive to seek some form of guaranteed market.

This trend will be particularly important in countries where exporting is dominated by a marketing board. As discussed earlier, boards are subject to public scrutiny and must appear responsive, primarily to producers but also to governments and, sometimes, to consumers, to a much greater degree than private firms. By contrast, trading companies are more directly concerned with maximizing profit through buying, selling, and handling grain.

The longrun policy for managing a marketing board is largely constrained to maintaining relative stability for prices, export volumes, stock levels, and market shares while the industry steadily expands. There is very little scope or incentive for board management to take market risks. Speculative profits tend to be absorbed by the revenue-averaging system for payment to producers. They are usually little recognized by the politicians and producers who appoint or elect the board members who, in turn, appoint the staff of the board. Speculative losses frequently involve adverse publicity, parliamentary inquiries, government expenditure, involuntary stock accumulation, and other undesirable consequences. Also, since the board's market shares for the main importing countries are scrutinized by producers, government bureaucrats, and the rural press, if a board allows its share of traditional market to slip, it will be heavily criticized. The rationale for Canada's withdrawing from the Russian grain embargo in 1980 was reportedly because of the loss of the Canadian Wheat Board's share in that market.

U.S. Policy

The policy response in the United States to the economic effects of tighter, more unstable markets is likely to focus on the farmer-owned reserve program, various export control proposals, and more attention to multilateral and bilateral arrangements. The U.S. administration intends to continue a domestic crop loan program and farmer-owned grain reserve in the 1981-85 farm legislation and this is likely to be supported by the Congress. Thus, if the main producing countries experience 2 or 3 years of good harvests and moderate to low prices, stocks will tend to accumulate in the United States, particularly if loan rates and trigger prices are linked to production costs. 20/ The buffer that these stocks provides will tend to reduce the pressure both on supplies and on U.S. policymakers to restrict exports, at least for a few years.

If there are recurrent bouts of high grain prices, however, new policy instruments may be required to achieve U.S. objectives. Increasing consideration will probably be given to breaking the link between international prices and U.S. domestic prices (66, pp. 139-140). 21/ As indicated earlier, the various policymaking groups concerned with the effects of grain prices on the macroeconomy, on food prices, on the livestock industry, or on the stability of producers' incomes will tend to adopt similar attitudes, each favoring some explicit or implicit export

20/ The current administration has indicated that it wants the Secretary to have considerable discretion and take market conditions into account when setting the loan rate. This may imply relatively lower loan rates, wider price fluctuations, and smaller Commodity Credit Corporation purchases.

21/ For a discussion of earlier attempts to break this link see (51).

restraint. In addition, groups concerned with the effects of possible overexploitation of U.S. farmland may favor some form of export controls (36, p. 245).

The outcome is by no means a foregone conclusion. The Republican Administration is generally in favor of free trade and there is, of course, a strong pro export lobby, largely representing grain producers, agribusiness, and exporting firms. These groups can be expected to campaign against controls and to attempt to ensure that farm legislation either restricts the Government's authority to impose controls or provides for large scale compensation if embargoes, for example, are introduced. Nevertheless, if price instability becomes severe, the balance of opinion is likely to shift toward greater use of export controls.

One possible policy instrument for stabilizing prices would be a grain marketing board with the power to regulate (stabilize) domestic prices and the volume of exports. Analyses on the effect of adopting a marketing board suggest that, although there may be potential revenue gains from price discrimination by a marketing board, a vast number of political and administrative difficulties would tend to preclude one of the Canadian or Australian type (6, 52, 10). Major institutional changes would be required if the existing private grain-marketing arrangements were replaced. In addition, new price policies for both domestic and export markets, together with production control mechanisms, would have to be developed.

None of the studies really addressed the broader implications for a U.S. marketing board of the dominant role of the United States as a grain exporter and price setter in world markets. The existing boards in other countries have been able to take the U.S. grain program as the starting point in establishing marketing and stabilizing policies. The management of a U.S. board would be far more omnipotent, and, therefore, its forecasting ability and marketing strategies would vitally affect grain trade and prices. The replacement of the current relatively decentralized private decisionmaking and price discovery process with an efficient single grain-marketing authority would present a major challenge.

For example, establishing the basis for determining the price at which grain would be sold on the various markets would present substantial difficulties. In a fairly static situation, with known supply and demand relationships in the major markets, it is possible to specify a theoretically optimal set of prices that would maximize total revenue (6). However, given the unstable and unpredictable nature of the grain market and the diverse range of objectives (in addition to revenue maximization) pursued by policymakers, a practical and broadly acceptable solution to the pricing problem would be difficult to achieve.

The most commonly employed price setting mechanisms in other countries are based on either estimates of the cost of production or an average of actual market prices. Experience with the cost of production approach has shown that it can easily lead to a land-price spiral and excess supply relative to demand. The adoption of a marketing board by the United States would, however, result in the free world market becoming so small and so dependent on U.S. policy that it would not provide an objective basis for price determination by the board.

In March 1980, the National Farmers' Union backed a bill for a producer-elected marketing board to handle all grain exports and imports (5). The American Agricultural Movement has pressed for a U.S.-led grain cartel (6, 1980). A bill (H.R. 4237) to create a national grain board was introduced but defeated in 1980. The other major national farmers' organizations and the specific commodity groups, which tend to be among the more conservative farm organizations, although expressing some dissatisfaction with the current marketing system, have not endorsed a marketing board. U.S. grain growers generally tend to oppose policies involving government direction of the marketing process, like grain embargoes. Thus, the current administration is unlikely to place the formation of a grain marketing board high on the policy agenda.

The adoption of an export tax by the United States, sometimes suggested as an alternative to a marketing board, is widely considered to be unconstitutional. 22/ It might be possible, however, to subsidize domestic grain usage or try to encourage some further domestic processing prior to export. For example, pricing of transportation and marketing facilities for exports could be changed to reflect full replacement costs, which, in some cases, would raise the cost of exporting significantly above current levels and encourage domestic consumption.

The sustained use of a policy instrument to separate domestic and international markets would involve a major change in the structure and conduct of the U.S. and international grain markets. In addition to the impact on the internal organization of grain marketing in the United States, any attempt to stabilize supplies to the domestic market would almost inevitably worsen fluctuations on world markets. Therefore, U.S. policymakers are likely to give continuing attention to achieving cooperation on world markets so as to prevent the need for direct, overt market intervention.

Cooperation Among Exporters

Generally, on the exporter side, both the marketing board countries and the free market exporters are likely to become increasingly conscious of their vulnerability to price fluctuations and

22/ For differing views on this (23) and (57).

their enhanced ability to affect world prices. In contrast, most of the importers will probably be relatively insensitive to increasing price instability as they concentrate on their main policy goal of ensuring adequate supplies for their food and feed. Some of the more price sensitive importers, however, may adjust their domestic policies. The recent adoption of a large feed grain price stabilization and storage program in Japan is indicative of this response.

In the event of both a more finely balanced market and greater numbers of bilateral agreements, the role of those who administer grain marketing policies will become more critical. The mark of a successful agricultural policymaker, administrator, and marketing board executive in the exporting countries will increasingly be a relatively price stable market. This is in contrast to earlier years when the main criteria of good market management were to avoid excessive stock accumulation while keeping production controls and government support payments to a minimum.

There will be considerable stress on improving each country's marketing programs through better information and more market analysis, contracting, hedging, etc. Also, however, there will be strong incentives for greater cooperation among exporters if these changes in the market eventuate. For the reasons outlined earlier, the prospects of broadly based, multilateral arrangements, including both importers and exporters, are poor. The pressure of the market situation may, however, impel the major exporters to cooperate more with one another. 23/ Such cooperation will be more of an attempt to achieve the greater market stability, required by policymakers, through exchange of information, than an attempt to form a profit-maximizing cartel.

Numerous studies have shown, given certain assumption, the theoretical revenue-enhancing potential for a grain exporters' cartel (e.g., 58). If the aggregate demand for grain imports is elastic, a reduction in export supplies will raise aggregate revenue

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23/ This possible development may appear at odds with previous experience. Alaouze, Sturgess, and Watson (3), for example, have shown that their model of triopolistic cooperation has been operational only when there are surplus stocks which individual exporters can use to maintain their market share. Generally, the hypothesis that depressed markets and rising stock levels induce some form of cooperation among exporters can be supported with a good deal of theoretical and historical evidence. The argument here, however, is not that, in the event of surpluses developing, the traditional cooperation will not recur, but rather that the instability in tight supply years may be so marked that the major exporters will feel compelled to cooperate to a greater extent than they have traditionally under these circumstances.

to exporters. Although the two goals of stability and revenue maximization may conflict at times, fairly sophisticated market discrimination schemes may be able to take advantage of the different elasticities in different markets with differential pricing schemes.

Although there have been times of overt joint action or, at least, some degree of quasi-cooperation among exporters, a variety of political and economic factors have prevented a cartel from forming. The constant tendency for overproduction, the wide variability of output and import demand, the U.S. preference for free trade, and the marketing boards' objectives of avoiding excess stocks and maintaining market shares, all mitigated against the formation of a cartel in the sixties and seventies. The revenue-sharing problems alone of a cartel would make it very fragile (58).

Even under a tight supply situation, there would be many constraints on the development of a revenue-maximizing cartel. The political and popular support for an overt cartel operation would be limited. Many producer groups would be against it, expressing concern about the possibility of production controls and high stockholding costs, about how the market revenue would be shared, and whether governments would use the cartel arrangements to impose embargoes or engage in other foreign policy activities at the possible expense of grain growers. Also opposing a cartel would be consumers and some importing countries, expecially the developing countries and some international organizations on behalf of developing countries. In the longer run, there could be a supply response among the smaller exporters and some importers that would lead to an erosion of the trade of the exporters.

A more defensive form of cooperation does not seem out of the question, however. Since the breakdown of the last round of multilateral wheat negotiations, the major exporters have agreed to meet at least twice a year to "ensure coordination of wheat production and marketing decisions" (4). If the primary grain producers experience a run of good seasons and stocks accumulate, the traditional competitive pattern of trade relationships (albeit with elements of triopoly behavior) among the exporters is likely to remain. But if tighter markets prevail, if importing falls more into the hands of government agencies, and if the trend to bilateralism results in more unstable prices and other adverse economic and political effects for the exporters, a pattern of more direct cooperation may develop.

This cooperation is unlikely to take the form of an international food reserve. Generally, the politicians, producer groups, marketing firms and boards, and the other groups that dominate policymaking in the grain industry are skeptical about the merits

of a reserve, cannot agree on who would bear the costs, and are concerned about the possible loss of sovereignty involved. 24/ A major commitment to funding by national governments, independent from specific grain industry arrangements, will probably be required if a food security reserve is to be accumulated. Such commitments are unlikely though unless most governments perceive that participation in an international grain reserve would further their own foreign policy goals. The appeal of stabilizing grain shipments and prices per se is unlikely to provide adequate incentive. Indeed, some argue that the private trade thrives on instability.

Nevertheless, the market situation and the changes in the structure and conduct of the international grain market are likely to force decisionmakers in grain marketing to be increasingly conscious of the impact on prices of their own major selling decisions. Government officials or marketing board executives faced with decisions concerning, for example, the size and timing of a bilateral contract will be increasingly concerned about possible impacts on the overall market supply and demand balance. 25/ In a finely balanced market, the timing of a contract could greatly affect not only the gains or losses under that contract but also prices in the residual market and prices in other contracts that did not have specified price conditions.

Some smaller exporters, Australia for example, have in the past adopted a largely competitive pricing approach. Because they individually account for only a small share of total trade, they have been able to assume that the excess import demand for their grain is more or less perfectly elastic. 26/ Those small exporters have, in effect, taken the position that the U.S. grain market and the related U.S. policies, such as the loan and the reserve programs, approximately determine world prices and that

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24/ Broad international goals, such as improved food security and marketing stability, could probably be achieved through an international grain reserve (25). But some individual countries or specific groups of producers or consumers would gain more than others and some would probably be net losers relative to their current situation. An operational structure of penalties and rewards, necessary to induce widespread international cooperation, has not yet been developed.

25/ Only the EEC, among the large exporters, with its policy of heavily subsidizing exports if necessary in order to balance its domestic market and support internal prices, is likely to be relatively insensitive to these changes (34, p. 42).

26/ See, for example, Miller and White (43), pages 12, 13. The latest estimate of the price elasticity of demand for Australian wheat cited by Miller and White is -10 (that is to say, a 1-percent increase in the amount of Australian wheat exported would reduce the price by 0.1 percent).

it is both necessary and economically rational to sell at around this level, a shade above or below, depending on their overall supply situation. While that position is still broadly correct, the ability of the small exporters to influence prices has probably been rising with the changing market structure over the last decade.

Greater awareness of the responsiveness of prices to their own actions and to the marketing policies of others and rising political and economic sensitivity to price instability in the exporting countries is likely to lead the exporters to greater cooperation in market information, in determining market shares, and in export commitments. This may come about gradually or as a consequence of a major market disruption. Some exporters may modify their marketing strategies, possibly to include a greater degree of stockholding coupled with some cooperative pricing strategy. Requests that importing countries adopt more stable, predictable trading policies may be able to be coordinated among the exporters.

Although there seems little prospect of significant progress in the short term, the search for multilateral solutions to trade and development problems will (and should) go on in the hope of minimizing conflict and maximizing the efficiency of resource use. This will tend to be conducted on a different plane and in a different context than the grain exporters' regular discussions referred to above, which will be more operationally oriented, will be more urgent in times of short world supplies and, it is to be hoped, will proceed more rapidly.

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